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CHRONIC VASOCONSTRICTION SPOTS AND THEIR SIGNIFICANCE.

BY EDWARD A. TRACY, M.D., BOSTON.

VASOCONSTRICTION spots, whitish spots in the skin, produced by vasoconstriction of the peripheral blood vessels in the skin, are phenomena that, so far as the writer is aware, have not been heretofore described or studied. As a rule, they are not impressive to the sight, and are apt to be overlooked unless the observer has an appreciation of what to look for. The best way to get an accurate idea of a vasoconstriction spot is to observe one carefully, and thus to become familiarized with the object to be looked for in a clinical examination. Fortunately for this purpose, in the normal individual a vasoconstriction spot can be produced readily by reflex action, and as the spot so produced does not differ in appearance from the vasoconstriction spots which are the subject matter of this essay, a practical method is offered to gain an accurate idea of the phenomena under consideration. The skin of the forearm is a convenient region for the production of such a reflex vasoconstriction spot. To produce one, rub lightly a small surface of the skin (about a quarter of an inch in extent) with the head of a match. After ten or more seconds, the rubbed skin will whiten (in Caucasians) and remain so for a couple of minutes, after which the spot slowly fades. Sometimes the spot is faintly visible after eight or more minutes. This reflex vasoconstriction spot may properly be termed a factitious vasoconstriction spot.

Vasoconstriction spots (except factitious ones) are abnormal. This has been determined from the examination of thousands of individuals. In but a minority of them were observed vasoconstriction spots in their faces, arms, or hands, to which skin regions the examination for the spots has been limited. Some of these individuals upon whom vasoconstriction spots were seen, apparently were free from symptoms of nervous disease. Others had symptoms referable to the brain,—dizziness, somnambulism, and others had signs of dyspituitarism. In some of these cases it was found that, while vasoconstriction spots were found at inspections with considerable intervals of time between, the location of the spots had shifted. But the individuals upon whom vasoconstriction spots were observed to be constantly in the same location—that is, those exhibiting chronic vasoconstriction spots—always presented disease of the nervous system. Chronic vasoconstriction spots are, therefore, regarded as pathognomonic.

and it is the chronic variety of vasoconstriction spots that is the subject matter of this essay.

The first observation of chronic vasoconstriction spots was made August 9, 1916, in a case of idiopathic epilepsy. On the left forearm of the patient, a girl fourteen years old, about the middle of the dorsal surface, a triangular whitish spot was noted (it could be covered with a split pea) and several smaller and irregularly shaped spots were noted on the dorsal surface of the right forearm. At times these spots were seen to fade quite away, and at other times they were seen to become a deeper white while being observed. These observations made it evident that the spots were due to active vasoconstriction, and not, *e.g.*, to scar tissue. From daily observation of the spots, in this case for several months, it was found that they occupied the same position in the skin and were, in fact, chronic vasoconstriction spots. From experiments and observations heretofore published[1] it is deduced that there are two essential factors in the production of peripheral vasoconstriction: 1, Stimuli passing over the sympathetic fibres innervating the blood vessels involved in the vasoconstriction, and 2, a sufficiency of adrenin in the blood stream. Clinical testing[2] in this particular case showed a sufficiency of adrenin in the blood stream; the problem presented itself, therefore, as to the origin of the stimuli coming over the vasoconstrictor sympathetic fibres, involved in the production of the spots. While puzzling over this problem, a case came under observation that furnished a promising lead for the solution. The case was that of a man upon whom, in the course of a clinical examination, there was discovered a vasoconstriction spot that further observations proved to be a chronic one. This chronic vasoconstriction spot was situated on the ulnar side of the left hand. Twenty years previously he had sustained a fracture of the left elbow. There is considerable deformity at the site of the fracture (indicated in the accompanying photogravure, Fig. 1) and the ulnar nerve is the seat of a neuritis located where the nerve crosses the elbow. At that joint there is a fusiform thickening of the nerve and it is very sensitive to pressure. His history gives numbness of the little and ring fingers, and spasmodic contractions of the adductors of the thumb and little finger, causing inability to work at carpentering. On several occasions, pressure over the thickened portion of the nerve caused pain and the following objective phenomena: Fibrillary contractures in the adductor of the little finger; sweating in an area of about a half square inch on the ulnar side of the dorsum of the hand (the sweating was evidenced by glistening points and moisture—the latter felt by passing a finger over the area); and some enlargement of the vasoconstriction spot. These observations appear to demonstrate clinically, that the vegetative fibres, autonomic and sympathetic, course along with the sensory nerves. The more important bearing of the observations, however, is the relation which they show exists between the neuritis and the vasoconstriction spot upon the patient's hand. The neuritis with its hyperplasia of connective tissue is evidently the cause of the abnormal flow of stimuli over the sympathetic fibres involved in the vasoconstriction spot. It may be that the sympathetic fibres involved are pinched or irritated by the hyperplastic connective tissue and are thus excited into a chronic hypertonic condition, transmitting more impulses to their nerve endings in the musculature of the peripheral blood vessels than other sympathetic fibres that are not so impinged upon. A direct connection between the fusiform neuritic enlargement of the ulnar nerve and the vasoconstriction spot is shown by pressure upon the nerve lesion causing an enlargement of the vasoconstriction spot.

The study of this case of chronic vasoconstriction spot shows clearly its dependence upon a lesion situated in the course of its nerve fibres—the local neuritis of the ulnar nerve where it crosses the elbow joint. With the knowledge derived from the consideration of this case, an explanation of the vasoconstriction spots originally discovered upon the arms of the epileptic is quite apparent. There was no peripheral neuritis to account for the spots. In idiopathic epilepsy there are no generally accepted lesions in the spinal cord. It is true that Bullard,[3] in 1906, reported a case of chronic idiopathic epilepsy in a non-hemiplegic, in which a degeneration of fibres in the cord was present. And John Turner[4] wrote: "Considering the frequency with which degenerated cells occur in the cortex, it is not a matter of surprise that a secondary degeneration of the pyramidal tracts is often found; this may represent bygone or recent change. The number of cords examined for these degenerations was sixteen, and five

showed no degeneration. In seven there was more or less marked degeneration of the crossed pyramidal tracts. If one may draw a conclusion from such a small number of cases, degeneration or deficiency of the fibres in the posterior columns is still more frequent, having been met with in eight cases."

Since Turner states his work was done on material from "congenitally deficient individuals," perhaps some or all hemiplegics, it furnishes no positive evidence of a cord pathology connected with idiopathic epilepsy *per se*.

If the peripheral nerves and the spinal cord have no irritative lesions to account for the abnormal flow of stimuli over the sympathetic fibres involved in the chronic vasoconstriction spots, an irritative lesion must be sought for higher up. In chronic idiopathic epilepsy there is the constant pathological finding of proliferation and increase of neurogliar tissue "occurring most markedly in various islets or special areas in the cortex."[5] The pathologic gliosis constantly present in idiopathic epilepsy is certainly an adequate cause for the pathologic downflow of abnormal stimuli over sympathetic fibres, if it be granted that the vasoconstriction fibres of the peripheral blood vessels originate in the cortex. That they do so is strongly indicated by the constant presence of vasoconstriction spots in chronic idiopathic epilepsy, a disease in which cortical gliosis is always found. The cortical gliosis, by impingement of the neurogliar tissue upon the vasoconstrictor neurones, could produce the irritation causing an excessive flow of stimuli over the involved sympathetic fibres, this excessive flow of stimuli being an essential factor, as has been shown, for the production of the spots. Other observations also indicate that the sympathetic neurones innervating the peripheral blood vessels originate in the cortex. Anemic dermography—the lasting white streak that follows stroking the skin of a normal individual, has been shown to be a reflex vasoconstriction of the peripheral blood vessels.[6] This reflex is composed of sensory (afferent) impulses, and efferent impulses, the latter coming over the vasoconstrictor fibres to their endings in the muscular tissue of the peripheral vessels. That the afferent (sensory) impulses reach the cortex and are reflected there is rendered probable from the fact that in hemiplegia (with brain lesion) the reflex vasoconstriction on the paralyzed side is found to be slower. As in these cases of hemiplegia, the sensory (afferent) fibres escape involvement in the hemiplegic brain lesion, it seems fair to assume that the other nerve element in the reflex, the efferent fibres, vasoconstrictor fibres, are involved in the hemiplegic lesion; and as this lesion is in the brain, below the cortex, it is difficult to comprehend the action of this lesion upon the efferent fibres unless they originate in the cortex. Further, the effect of the emotion of fear in producing blanching, and the effect of terror in cats (Cannon's experiments) in increasing the production of adrenin in the suprarenal capsules, are more comprehensible by the assumption of a cortical origin for the sympathetic fibres innervating the vessels of the face and the suprarenals, than by the contra-assumption of "no vegetative fibres in the cortex nor in the centrifugal spinal tracts," the hiatus between the cortex and the known nerve paths to the peripheral vessels and to the suprarenals being bridged by an imaginary "biotonus"—the views of L. Müller.[7] With the facts already given in favor of a cortical origin for sympathetic fibres, Müller's hypothetical concept appears to be unnecessary.

Early in the study of chronic vasoconstriction spots, it was found that they are always associated with pigment spots in their neighborhood. Thus in Case 2, that of a chronic vasoconstriction spot on the ulnar side of the dorsum of the left hand, nearby is located a pigment spot, as is shown in the photogravure of this case (Fig. 2). In Case 1, that of an epileptic upon whom chronic vasoconstriction spots were discovered, numerous pigment spots are located in skin regions neighboring to the vasoconstriction spots. The vasoconstriction spots and pigment spots in this case are pictured in the photogravure (Fig. 3).

In the study of vasoconstriction spots, the pigment spots (of various shades of light to dark brown, and in size from a speck to an eighth of an inch square) serve the important purpose of landmarks on the skin, as the pigment spots are permanent. Using the pigment spots for landmarks, the location of the vasoconstriction spot or spots can be determined in reference to them, and a diagram of the vasoconstriction and pigment spots can be made at the time of the first observation. With this diagram before us, at later observations, we can easily determine the chronicity or otherwise of the vasoconstriction spot under observa-

FIG. 1.—Left arm at fullest extension, showing deformity at elbow joint.

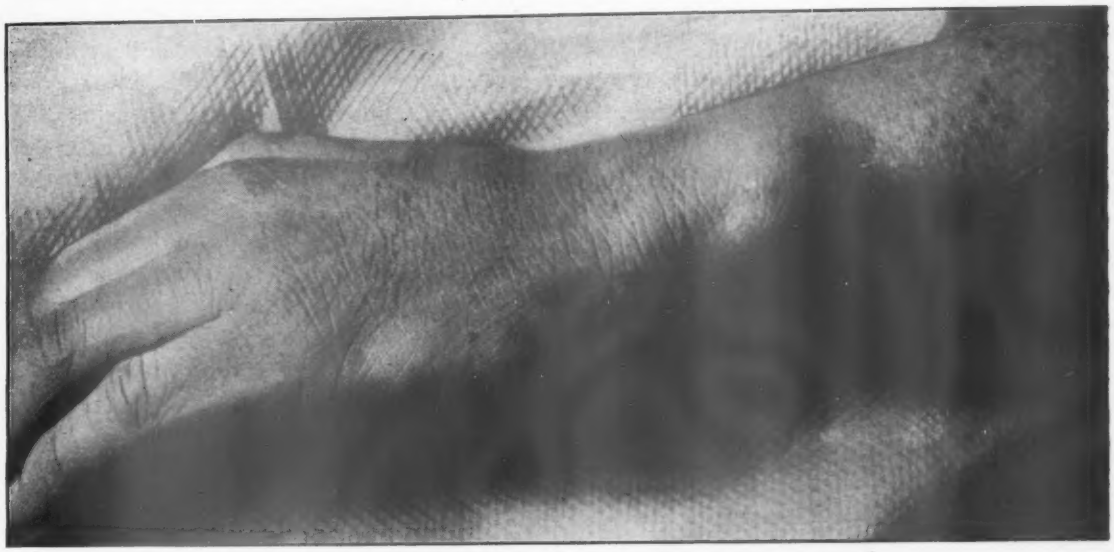

FIG. 2.—Left hand, showing chronic vasoconstriction spot and pigment spot at ulnar side of dorsum.

FIG. 3.—Right and left forearms, showing chronic vasoconstriction spots and pigment spots, also anemic dermography (reflex vasoconstriction)—the white streaks across both forearms. Case 1, chronic idiopathic epilepsy.

tion. Whether a suspected spot be a true vasoconstriction spot or not can often be determined by gently stroking the skin nearby with the narrow edge of a wooden tongue depressor, using a pressure of about two and a half ounces. After stroking, if the suspected spot intensifies, becomes whiter, it is evident that we have to do with a vasoconstriction spot.*

Having described somewhat the characteristics of chronic vasoconstriction spots, a brief history of some cases in which they have been found and studied will be given, followed by a consideration of their significance.

CASE 1. H. D. Female. 16 years old. Under observation since May 1, 1916, to the present time. This is the case in which chronic vasoconstriction spots were first observed. Her history gives severe convulsions for a period of two weeks in infancy. She had measles at six years. A year after her mother noticed that at times she would clasp her hands suddenly, at times would become "deadly white" and faint. At eight years, convulsions occurred; the attacks increased in severity and from her tenth year to her fifteenth year she averaged sixteen attacks of grand mal a month.

Diagnosis. Chronic idiopathic epilepsy.

CASE 2. J. S. Male. Aged 29 years. Under observation from August 18, 1916, to the present time. While making a physical examination of him, there was discovered a vasoconstriction spot together with a pigment spot on the ulnar side of the dorsum of his left hand. Further observations determined the chronicity of the spot. The important findings in this case have been reported above.

Diagnosis. Left ulnar neuritis.

CASE 3. R. W. Female. Aged 21 years. Under observation from Oct. 9, 1916, to Dec. 9, 1916. She had measles and mumps in childhood. Has had several attacks of tonsillitis. Had three attacks of convulsions at time of first menstruation, which occurred in her twelfth year. Two years ago had two attacks of convulsions. Complains of attacks of dizziness, of attacks of sudden pallor and weakness, at which time she must sit down to prevent falling. A few chronic vasoconstriction spots were observed on the palmar and dorsal surfaces of the right forearm, and on the dorsum of the left forearm, with pigment spots on each surface also.

Diagnosis. Chronic idiopathic epilepsy.

CASE 4. T. B. Male. Aged 19 years. Under observation from Nov. 18, 1917, to Aug. 1, 1918. He had measles and whooping cough in childhood. Healthy otherwise till eighteenth year. For a period previous to his first convulsion in March, 1917, he noticed that at times, when walking, "things would go black" for a moment or so. In May, 1917, he had another attack of convulsions, and in June a series of five attacks. In July he was operated upon for adenoids. In August he had a series of four or five attacks, and in September and October attacks occurred once a week. Chronic vasoconstriction spots were observed on the dorsum of the left forearm, and on the dorsum of the right forearm, one on each surface, together with small pigment spots.

Diagnosis. Idiopathic epilepsy.

CASE 5. F. Z. Male. Aged 12 years. Under observation from Nov. 15, 1917, to the present time. Had measles at five years, diphtheria at six years. Chronic otitis media on right side. Had first attack of convulsions last May. Has had six attacks up to Nov. 15, 1917. Since first outbreak of convulsions, his mother states, he would come home to her at times frightened because of strange sensations. He has dizzy spells. Before his first convulsion his mother observed no difference in character between him and her other three normal children.

A couple of chronic vasoconstriction spots, together with two minute pigment spots, are located on the dorsum of the right forearm.

Diagnosis. Idiopathic epilepsy.

CASE 6. T. H. Aged 15 years. Under observation from Nov. 13, 1916, till the present time. Had measles at two, pneumonia and pleurisy at 11 years. At eight years, had a fall from a tilt, striking on her head, and became unconscious for three hours. When twelve years of age, had attacks of dizziness and sudden weakness for a while, after which they ceased till July, 1916, when she again suffered from attacks of dizziness, sudden weakness, and also from fainting spells—sometimes four times in a week. Had one attack when asleep at night, characterized by deep breathing. The fainting spells were attributed to heart disease. Patient is chronically constipated. Several examina-

* The writer has devised a little instrument for testing the vasomotor reflexes, which can be used as well for this purpose, its chief merit being the easy attainment of the close approximation of the pressure of two and a half ounces when used for stroking the skin.

tions showed the heart to be normal. Marked pallor is present. A patch of gray hair is noted on the right frontal region.

Chronic vasoconstriction spots are noted on the dorsal surfaces of the left and right forearms, together with pigment spots.

Diagnosis. Incipient idiopathic epilepsy.

CASE 7. A. J. Male. Aged 10 years. Under observation from Oct. 30, 1917, to the present time. Had bronchitis at six months, whooping cough at two years, and measles at seven years. His father, dead seven years, was an alcoholic. His maternal aunt was an epileptic. In June, 1917, patient commenced to have dizzy and fainting attacks—he would become "deadly white" and "topple over." Twice he had two attacks on the same day. He suffered so frequently from dizziness that his mother ceased sending him on errands for fear something might happen to him. The fainting spells were attributed to heart disease. Several examinations showed a normal heart. Chronic vasoconstriction spots and pigment spots were observed on the dorsal surface of the right and left forearms and on the palmar surface of the left forearm.

Diagnosis. Incipient idiopathic epilepsy.

CASE 8. M. G. Female. Aged 10 years. Under observation from Oct. 30, 1916, to Jan. 9, 1917. Is said to have had convulsions in infancy. While under observation she was a pupil in a special class for mentally deficient children. She suffers frequently from headache. At times it is very difficult to manage with her in school because of her tantrums. A Binet test made May 4, 1914, gave her a mental age of 3.4—her age being then seven years and eleven months. In December, 1916, a Binet test gave her a mental age of 5.4, she being ten and a half years old at that time.*

Several chronic vasoconstriction spots and a pigment spot were observed on the dorsum of the left forearm. Some were also observed on the dorsum of the right forearm, together with a patch of chronic vasodilation. The vasoconstriction spots were seen to be intensified on two different occasions, when the child was very troublesome.

Diagnosis. Organic brain disease.

CASE 9. B. K. Female. Aged 14 years. Observed for several months in 1916, in an ungraded class, the average age of the pupils in it being ten years. Chronic vasoconstriction spots located on the dorsum of the right forearm; also a patch of chronic vasodilation measuring about a quarter of an inch across enclosing a vasoconstriction spot.

Diagnosis. Organic disease of the brain.

What is the significance of chronic vasoconstriction spots?

Vasoconstriction in the peripheral blood vessels is caused by stimuli coming over the vasoconstrictors (sympathetic nerve fibres), together with a sufficiency of adrenin in the blood stream. The need of a sufficiency of adrenin in the blood stream has been deduced from experimentation on the production of reflex vasoconstriction.[8] A chronic vasoconstriction spot implies a constant discharge of stimuli over the involved vasoconstrictors, a quantity of stimuli greater in amount than that discharged by neighboring normal sympathetic neurones. The evidently causative condition for the increased flow of stimuli producing the chronic vasoconstriction spot in Case 2, is the ulnar neuritis, involving sympathetic fibres. The constant irritation of hyperplastic connective tissue impinging upon neurones may be the active cause of this local hypertonus of nerve fibres. This view is strongly supported by the experiment in Case 2, of making moderate pressure upon the fusiform enlargement of diseased nerve tissue, sequential to which the vasoconstriction spot was seen to increase in size. This increase can be explained by the pressure employed producing an impingement of vasoconstriction fibres neighboring to those involved in the chronic vasoconstriction spot.

In chronic idiopathic epilepsy there is a constant pathology in the cortex,—that of gliosis. This fact appears to be sufficient to account for the chronic vasoconstriction spots found on careful observation in chronic idiopathic epilepsy. Bearing in mind the findings in Case 2 herein reported, we have in this gliosis a sufficient reason (irritation of sympathetic neurones by gliotic tissue) for the production of the spots. Again, a cortical gliosis is found in other brain diseases, and Cases 8 and 9 are probably examples of such gliotic brain lesions (in non-epileptics) as in these cases there were no peripheral nerve or cord affections to account for the chronic vasoconstriction spots found present. In Case 8, it was noted that intensification of the vasoconstriction spots was observed associated with periods of mental ex-

* These tests were made by her teacher, Miss Katherine Haskell, who kindly furnished me with the above data.

citement. This observation connects the chronic vasoconstriction spots with a cortical phenomenon,—mental excitement, a connection readily explainable if we admit a cortical origin for the peripheral vasoconstrictors. A suggestive negative phenomenon, that points to the cortical origin of the peripheral vasoconstrictors, is observed in many cases of chronic idiopathic epilepsy. This phenomenon is a chronic patchy reflex vasoconstriction. Instead of the normal white streak of vasoconstriction that follows stroking the skin, a patchy streak is constantly observed in certain regions of the face or arms. This constant patchy reaction can be explained by some of the nerve fibres involved in the reaction not functioning. J. Turner,[9] in his investigation of the pathology of idiopathic epilepsy, writes: "Considering the frequency with which degenerated cells occur in the cortex, it is not a matter for surprise that a secondary degeneration of the pyramidal tracts is often found." He also notes that "degeneration or deficiency of fibres in the posterior columns is still more frequent." This degeneration of fibres in the cord is very suggestive; it can be comprehended if secondary to cortical changes, and if the fibres involved are efferent ones. The constant absence of reflex vasoconstriction in certain skin areas in chronic cases of idiopathic epilepsy may be the clinical manifestation of this degeneration of nerve fibres found in the disease.

A most interesting feature in the study of chronic vasoconstriction spots is the intensification of these spots observed at times. In Case 8, this intensification was noted on two different occasions coincident with a degree of hyperkinesis manifested in the patient.

A careful study of Case 1 (a case of chronic idiopathic epilepsy) demonstrated that the tonus, irritability of sympathetic neurones increased before the onset of convulsions. In this case (Case 1) there was a marked acidosis present (demonstrated by the amount of bicarbonate of soda required to render the urine neutral), and this acidosis increased before convulsions. Frequently a marked albuminuria occurred directly after an attack of convulsions. There was evidently a marked defect in the metabolism present. We now know that the glands of internal secretion control the metabolism of the living body. It may be added that this control appears to be exercised in conjunction with impulses coming over the vegetative nervous system—since it has been shown that adrenin in the blood stream is inert for the production of vasoconstriction until nerve impulses pass over the sympathetic fibres. (See "A Contribution to Vegetative Neurology," BOSTON MEDICAL AND SURGICAL JOURNAL, Vol. clxxvi, p. 538). Proof of the marked increase in tonicity of sympathetic fibres before the onset of convulsions in Case 1 is furnished by photographs of the arms of the patient. A series of consecutive plate exposures was made at minute intervals. The second plate showed small vasoconstriction spots not pictured on the first plate; the fourth plate showed vasoconstriction spots not on the third plate. These spots had originated in the moments intervening between the exposures of the plates, and so were termed "new-born" vasoconstriction spots. They evidence an increase in tonicity of the vasoconstrictors involved in the production of the spots. From a study of this case, with its increase of acidosis before convulsions, it would appear probable that some irritating substance was then circulating in the blood, and that this substance irritated diseased sympathetic fibres, and caused the outbursts of stimuli productive of the "new-born" vasoconstriction spots. That sympathetic fibres are diseased in idiopathic epilepsy has been previously demonstrated. (See "Idiopathic Epilepsy a Sympathicopathy," BOSTON MEDICAL AND SURGICAL JOURNAL Vol. clxxviii, Nos. 23, 24, 25 and 26.)

In Case 8, there was not only an evident mental deficiency, but a mental disease that manifested itself by periods of mental and motor excitement, followed by periods of torpidity. In this case there were never observed the marked vasoconstriction reflexes that accompany epilepsy, nor was there any history of convulsions except possibly in infancy. The action of the chronic vasoconstriction spots in becoming intensified at the periods of hyperkinesis suggests for explanation a faulty metabolism causing irritation of brain cells, analagous to the more nearly demonstrated toxin irritation of sympathetic fibres in chronic idiopathic epilepsy. The question: What is the significance of chronic vasoconstriction spots? is answered in the following conclusions drawn from the study of them.

CONCLUSIONS.

Chronic vasoconstriction spots, observed in the forearms, hands and face, are found associated with nerve and brain lesions. One or more pigment spots are found nearby.

Chronic vasoconstriction spots imply an increased flow of nerve stimuli over the vasoconstrictors involved in the production of the spot—a true hypertonia of the vasoconstrictors involved. The cause of the hypertonia of the vasoconstrictors involved in the chronic spots is probably mechanical—an enmeshment of the fibres in glial or hypertrophic connective tissue, and a consequent constant irritation of the neurones by the pressure of this tissue. The cause of the intensification of the spots at times observed, especially in idiopathic epilepsy, is probably a toxin in the blood stream, the product of a faulty metabolism, that further irritates the abnormal sympathetic neurones.

Chronic vasoconstriction spots, in cases in which peripheral nerve and cord lesions are excluded, point to an organic brain lesion.

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ACTIVE TUBERCULOSIS.

BY H. F. GAMMONS, M.D., CARLSBAD, TEXAS.

PHYSICIANS are often called upon to decide whether a certain case of tuberculosis is active or not. The question is very easily answered in a great many cases. However, with our present knowledge of tuberculosis it is impossible to say in every case that the disease is or is not active.

In order to determine whether a certain case is active we must define activity as it is applied to tuberculous lesions. A tuberculous lesion is active just as long as there is an imperfect or incomplete walling off of the tuberculous focus so that either the bacilli or their poisons can affect the living cells in the vicinity of the lesion by continuity or in distant parts of the body by being carried through the blood stream.

In case the walling off of the tuberculous focus by tubercle formation and fibrosis is almost complete, we should not expect to find the signs of activity that we should in the case of very little fibrosis. In the chronic case we do not find the manifestations of activity that we do in the early case, everything else being equal.

The student of tuberculosis is impressed with the fact that activity in tuberculosis, like other considerations in this disease, is relative and that it is a question of degree of activity. Furthermore, it is probable that every case of tuberculosis is active to a certain extent, excepting those cases where the focus has become calcified and the bacilli killed.

In order to make an absolutely definite statement that a certain case is active it would often be necessary to have the pathological specimen of the infected area to help in deciding. However, we can in our summary of a case usually decide whether the lesions are active and what the patient should do to get well or to keep well.

Specialists, as well as general practitioners, have in the past made the mistake of telling their patients in an unqualified way that their disease was cured or arrested. I have made many similar mistakes only to find that the patient has gone out and, after a short period of ordinary life, has had a recurrence of his former symptoms.

In later years I have been more cautious and have frankly admitted that I did not know, in apparently well cases, whether their foci were healed perfectly and that they should still consider themselves sick though able, for all practical purposes, to live the ordinary life, with a few restrictions. Furthermore, I emphasize the probability that once a person has tuberculosis he can consider it will stay with him only to crop out with renewed vigor if given a good chance.

A patient must be handled very diplomatically when given this information, and it is better not to tell him too much at the first visit or at the first examination in a sanatorium, as he will often, in his toxic condition, misinterpret any information, and in his morbid state will imagine the worst possible outcome of his disease.

In former years I went by the stethoscopic findings to a great extent, in conjunction, of course, with other signs, in determining the activity of a case. I laid great stress on the presence of crepitant râles at the apex as denoting activity as, of course, they do. However, as I have followed up these cases month after

month and year after year and have found apparently the same crepitant râles in the same location, I have questioned the value of finding these râles as a proof of activity. That they mean active pneumonic inflammation is not questioned, but the extent of time that they will persist is questionable. As we compare the other symptoms in similar cases with the symptoms in cases where we have only modified breath sounds we are impressed with the importance of these other constitutional and toxic symptoms in deciding the activity of a case.

Physicians often tell patients, after a chest examination only, that the disease is active or arrested without considering the other symptoms such as the pulse and temperature. It is absolutely impossible to say definitely that the case is active by chest examination alone. One can tell that there was activity but not that it is still present. I have examined patients from day to day and found the physical signs much different from day to day, but we should not infer that the disease is advancing, as it is changes in meteorological conditions that are probably causing the increase in the adventitious signs.

It is only by consideration of all factors in the case that we can arrive at a definite or nearly definite conclusion in regard to the activity in tuberculous cases. One of the most important signs of activity is elevation of temperature, and of equal importance is the rapid pulse, especially in the beginning cases. Cough and expectoration, loss of weight, appetite and strength and the tired feeling, if persistent, are indications of active trouble.

The patient can often tell by his own sensations that he is not up to his normal before there are other signs of activity. Patients often feel tired and nervous, or they do not have the physical endurance that they usually had, and the lack of endurance, muscle and nerve tone must be considered in this question.

The question of temperature has received many answers, some authors contending that one temperature is normal and some contending that another is normal. It is surely possible for patients to be absorbing toxins and to have local inflammations in their tuberculous foci without exhibiting any fever. In the chronic cases who have developed an antituberculin and in the open cases who are expectorating their toxines it is very probable that we have activity without temperature exhibitions.

A patient can expectorate sputum containing bacilli and still not have activity. However, the patient must not exhibit any other signs, toxic or constitutional.

All tuberculous patients should be tried out on graduated exercise under the supervision of a specialist before final judgment is passed on their probability of being inactive. This applies only to those cases who have no other signs of activity. It is a very frequent occurrence to find cases who, during rest treatment, show no signs of activity but, with a little exercise, develop temperatures.

CONCLUSIONS.

In order to tell whether a certain case of tuberculosis is active or arrested we must take all the factors in the case into consideration and not depend on the physical signs alone. The patient must be told that once he has tuberculosis, he must always be careful and must live according to the directions of competent physicians.

The manifestations of activity are more severe in the early cases and in the chronic cases with poor resistance.

A CLINICAL CHART OF RENAL DISEASES.

By H. S. Jelalian, M.D., Boston.

The subjoined chart of renal diseases is submitted for publication in the Journal, with the hope that it may assist medical students and young graduates in English-speaking countries in coming to a quick and correct recognition of some of the most salient facts in the diagnosis of the diseases of the kidneys. The writer has had absolutely no claim whatever to original authority in preparing the Chart. It has been compiled and arranged in a tabulated form by following the teachings of the great masters in this specific field of medical science, adding, if I may be permitted to say so, a little of my own experience in the analysis of urine both in the Laboratory of Tufts College Medical School and in my own private practice.

Why did I prepare this Chart? I have felt all along that the most complicated diseases so far as the symptomatology is concerned, are

A CLINICAL CHART URINARY

NAME	PATHOLOGY	ETIOLOGY	SYMPTOMS	AMOUNT OF URINE	SP. GR.	REACTION	COLOR	AMOUNT OF SOLIDS	UREA
Active hyperaemia	Arterial engorgement	Irritation by poisons	Those of kidney irritation	8 to 1000 c.c.	1.035 to 40	Acid	High, not smoky	Relatively increased	Relative increase
Passive hyperaemia	Venous engorgement	Obstruction of circulation in other organs	Same as above plus dropsy	5 to 800 c.c.	1.025 to 30	Acid	High	Dim.	Usual normal
Acute pyelitis	Inflam. of renal pelvis and calices	Acute infectious disease	Renal colic or none	Diminished	High	Acid	High	Almost normal	Dim. normal
Chronic pyelitis	Same as above	Gravel, tuberculosis, etc.	Renal colic radiating along the ureters	Dim.	1.010 to 14	Faintly acid or alkaline	Pale	Dim.	Dim.
Acute cystitis	Inflam. of the vesical mucous membrane	Pathogenic micro-organisms	Frequent micturition, pain and pyuria	Dim.	High	Acid quickly becoming alkaline	High or bloody	Normal except chlorides	Normal
Chronic cystitis	Same as above	Same as above	Same as above	About normal	Lowered	Alkaline	Turbid	Dim.	Dim.
Diabetes insipidus	Obscure	Obscure	Inordinate thirst with polyuria	7500 to 20,000 c. c.	1.002 to 7	Acid or neutral	Pale	Increased	Absolutely increased
Diabetes mellitus	Arterio-sclerosis, cardiac hypertrophy and hepatic degeneration	Nervous influences and hepatic insufficiency	Thirst, polyuria, emaciation and nervous disorders	5000 to 20,000 c. c.	1.030 to 1.040	Acid	Light greenish tint	Increased	Increased
Amyloid degeneration	Amyloid or lardaceous degeneration of the liver and spleen as well as of the kidneys	Chronic suppurative processes, syphilis, etc. Phthisis	Gastric and intestinal disorders	Above normal. Variations	Low. 1.010 to 14	Acid	Pale	About normal	Dim.

BRIGHT'S DISEASE

NAME	PATHOLOGY	ETIOLOGY	SYMPTOMS	AMOUNT OF URINE	SP. GR.	REACTION	COLOR	AMOUNT OF SOLIDS	UREA
Acute parenchymatous nephritis									
First stage	Tubular and glomerular inflam.	Acute infectious fevers, cold, etc.	Dropsy, pallor, high temp., lumbago, etc.	3 to 500 c. c.	1.020 to 30	Acid	Smoky	Dim.	Dim.
Second stage	Same as above	Same	Same	About normal	Normal	Acid	Dark. Less smoky	Dim.	Dim.
Third stage	Same	Same	Same	2 to 3000 c. c.	1.015	Acid	Pale	Normal	About normal
Chronic parenchymatous nephritis									
Active state	Enlargement o the kidney	Uncertain, insidious. Follows the acute form	Dropsy, puffy eye-lids. Frequent urination.	8 to 1000 c.c.	1.020 to 25	Acid	High	Dim.	Rel. in abs. dim.
Inactive state	Same	Same	Patient better	13 to 1400 c.c.	1.013 to 15	Acid	Pale	Dim., b more th in the a tive	Same
Chronic interstitial nephritis	Hypertrophy of the left ventricle, arterio-sclerosis and renitis. Contracted kidney	Hereditary, syphilis, alcohol, dietetic influences	Dyspnoea, palpitation of the heart, headache	25 to 4000 c.c.	1.008 to 10	Acid	Pale	Dim.	Dim.

AMOUNT OF NORMAL SOLI EXCRETE

The total amount is about 60 to 70 grammes in 1500 c. c. of urine. *Urea*=30 to 35 grms., or about half of t
Earthy phosphates=1 to 1.5 grms. *Alkaline phosphates*=2 to 4 grms. (2.8 grms. of H_3PO_4). *Sulph*=1.5 to 3

L CHART URINARY DISEASES.

AMOUNT OF SOLIDS	UREA	URIC ACID	CHLORIDES	ALBUMEN	AMOUNT OF SEDIMENT	BLOOD	MICROSCOPIC INSPECTION	DROPSY	PROGNOSIS.
Relatively increased	Relatively increased	Relatively increased	Diminished, if fever	Trace	Considerable	Present	Hyaline and granular, blood and epithelial casts. Renal cells.	None	Inflam. disappears in a day or two
Dim.	Usually normal	Normal	Slightly diminished	¼ to ½% in pregnancy	Same	None	Hyaline and granular casts. Renal and epithelial cells	Present	Atrophied kidneys etc.
Almost normal	Dim. or normal	Dim. or normal	Dim.	Trace	Abundant	Present	Caudate, uric acid, calcium oxalate, blood and pus cells	None	Unfavorable
Dim.	Dim.	Dim.	Dim.	Large trace	Abundant	Rare	Lot of pus. There may or may not be blood	None	Unfavorable
Normal except chlorides	Normal	Normal	Dim.	Trace	Considerable	Present	Squamous and round epithelial cells. Pus and blood	None	Good
Dim.	Dim.	Normal	Normal	Large trace	Considerable	Sometimes present	Bladder cells, pus, and crystals of triple phosphates	None	Good
Increased	Absolutely increased	Increased	Inc.	Usually absent. No sugar	None	None	Precipitation of earthy phosphates	Oedema of lower extremities in later stages	Good
Increased	Increased	Inc.	Inc.	Trace or none. Sugar 4 to 5%	None	None	Ca oxalate and renal epithelial cells	None	Bad under 30 years of age
About normal	Dim.			½ to 1½%. More globulin than serum albumen	Small	None	Hyaline and pale granular casts. Little fat.	None, except in complications	Bad

BRIGHT'S DISEASE

AMOUNT OF SOLIDS	UREA	URIC ACID	CHLORIDES	ALBUMEN	AMOUNT OF SEDIMENT	BLOOD	MICROSCOPIC INSPECTION	DROPSY	PROGNOSIS
Dim.	Dim.	Dim.	Nearly absent	½ to 1½%	Abundant	Present	Hyaline, epithelial and blood casts. Blood and pus	Present. Comes on suddenly	Good. Duration from a few weeks to two years. Graver in children
Dim.	Dim.		Dim.	¼ to ½%	Less than above	Present	Brown and light granular casts. Pus and fibrinous cells	Decreasing	Good
Normal	About normal		Dim.	Trace	Considerable	None	Free fat, fatty cells and fatty casts, with those of other stages	Decreasing	Good
Dim.	Rel. inc. abs. dim.		Normal	½ to 5%	Less than above	None	Free fat, fatty cells and fatty casts. Compound granular cells	Very great	Very bad
Dim., but more than in the active	Same		Dim.	½ to ¼%	Same	None	All found in the active state but less	Decreasing	Better, but no recovery
Dim.	Dim.		Dim.	Trace	Slight	None	Narrow hyaline and pale granular casts	Rare	Bad: of long duration

AL SOLIDS EXCRETED IN 24 HOURS.

or about half of the total. *Uric acid*=0.4 to 0.8 grm. *Chlorides*=10 to 16 grms. (6 to 10 grms. of chlorine).
). *Sulphates*=1.5 to 3 grms.

Compiled and arranged by Dr. H. S. Jelalian, Boston, Mass. All rights reserved.

the diseases of the renal system, comprising, as it does, not only the kidney with its cortical, medullary and glomerular structures, but also the ureters, the bladder and the urethra. The urine is the surest guide to a correct diagnosis of the diseases of the kidney. To be sure, we have a few important, very important, physical signs, such as hypertrophy of the ventricles, dropsy, anasarca, etc., to help us in the diagnosis of renal disease, but these symptoms cannot be determinant, because they appear also just as regularly in cardiac and hepatic diseases. Analysis of the urine will, therefore, spread before us a pathologic panorama, bewildering in its extent and vast in its phenomena. Crowded as the course of a student in our medical schools is, he has no time to go deep down into the subject for a general comprehension of the various salient facts concerning the diseases of the kidney. Hence, as it seemed to me, the necessity of having on the wall a Chart comprehensive enough to show the pathological conditions both in the kidney itself and in its excretion.

Just a word explanatory of the construction of the Chart. It has been divided into eighteen items, each of which on the same horizontal line gives a specific indication of the present condition in the composition of the urine. Perpendicularly, it is divided into acute and chronic diseases. At the bottom of the Chart is given a table of the amount of normal solids excreted in 24 hours, which will, I believe, serve for a useful purpose of comparison. I have not attempted to give even an outline of treatment for the various manifestations of diseased conditions indicated on the Chart, because that would be a dangerous ground to tread upon.

THE IMPORTANCE OF BLOOD PRESSURE OBSERVATIONS IN SURGICAL PROGNOSIS.*

BY ALBERT H. MILLER, M.D., PROVIDENCE, R I.

FOR making a pre-operative prognosis and for judging the condition of the patient during operation, the blood pressure is the most valuable single means at our disposal. It may uncover arterio-sclerosis, nephritis, myocarditis, aortic insufficiency, or mitral stenosis. It registers the patient's ability to withstand hemorrhage, the depression of the anesthetic, and surgical shock. During the operation, the blood pressure provides the most valuable key to the patient's condition and gives early warning of the presence of shock.

* Read before the Providence Medical Association, Oct. 7, 1918.

BLOOD PRESSURE CONDITIONS.

The primary factor in the maintenance of blood pressure is the contraction of the cardiac muscle, which forces, during each ventricular systole, a quantity of blood into the larger arteries. These vessels, whose strong middle coat consists of elastic tissue, are distended during systole and, contracting during diastole, send a constant stream of blood through the smaller arteries, the capillaries, and the veins.

With a cannula inserted in the proximal end of a divided artery, the pressure in the vessel may be directly measured. The mercurial sphygmomanometer also estimates the arterial pressure with sufficient accuracy. The aneroid instrument is calibrated from comparison with a mercurial sphygmomanometer and its dial marked in millimeters or centimeters of mercury.

NORMAL BLOOD PRESSURE.

In a healthy young adult, the systolic pressure is represented by a column of mercury 120 millimeters in height, indicating a pressure of two and a half pounds per square inch. The systolic pressure increases from 120 millimeters, at the rate of one millimeter for each two years of age over twenty.

During diastole, the arterial pressure declines to a point indicated by a column of mercury 80 millimeters in height. The diastolic pressure represents the force or head which sends the blood in a constant stream through the small arteries, capillaries, and veins.

The pulse pressure represents the increment of force added to the diastolic pressure by each cardiac systole. The normal pulse pressure is 50 per cent. of the diastolic pressure. This pressure ratio varies from over 100 per cent. to zero, approaching the lower limit with impending death. The normal pressure ratio varies from 40 to 60 per cent.

The blood pressure, especially the pulse pressure, varies during the respiratory cycle, being less during inspiration and greatest at the beginning of expiration.

The systolic pressure increases with muscular development, physical exercise, eating, straining at stool, excitement, and mental worry, and diminishes with fatigue, rest, and sleep. It is lower in the erect than in the horizontal posture. The diastolic pressure is more stable and shows less variation from these causes.

BLOOD PRESSURE AND SHOCK.

The signs of surgical shock are (F. C. Mann): Loss of sensibility to pain indicated by diminution in the necessary dosage of the anesthetic; pallor of the mucous membranes; a small, weak pulse; irregular, rapid, shallow or gasping respiration; markedly lowered blood pressure.

Signs closely simulating shock appear with hemorrhage or an overdose of an anesthetic. Certain intra abdominal manipulations produce shock with great regularity. The introduction of gauze packing into the abdomen or the prolonged manipulation of the intestines may be followed by signs of shock. Traction on the uterus, the gall bladder, or the pylorus are followed by a sharp decline in blood pressure.

There is a general impression that shock is likely to occur in patients who are lightly anesthetized. We have been unable to find symptoms of shock resulting from light anesthesia and are certain that the possibility of shock being so produced is so slight as to be generally disregarded. When a large dose of the anesthetic is administered, shock results with such regularity that we have come to believe that an overdose of the anesthetic is by far the most potent influence in the production of surgical shock.

APPARATUS.

For blood pressure observations during surgical operations, the usual five by nine rubber cuff with inelastic arm band is employed. The cuff is connected with the aneroid gauge by a rubber tube three feet long. A cautery bulb for raising the pressure in the cuff and a needle valve for reducing the pressure are attached to the gauge by a short rubber tube. The accuracy of the scale of the gauge is frequently tested by comparison with a standard mercurial manometer.

A flat stethoscope bell is connected to ear pieces by a single rubber tube three feet long. The bell is provided with an elastic garter for keeping it in place at the bend of the elbow.

TECHNIC.

Before the anesthesia is commenced, the arm band is wrapped neatly about the arm and the outer fold is secured in place with a safety pin. The stethoscope bell is applied over the brachial bifurcation at the bend of the elbow and held in place by the elastic band.

With the stethoscope ear pieces in place, the pressure in the cuff is pumped up until the pulse is recognized. The pressure is then increased until the pulse is no longer heard. Upon opening the needle valve so that the pressure slowly falls, the point at which the pulse is first heard is noted as the systolic pressure. As the pressure further declines, five phases are noted: At the first appearance of pulse sound; on the appearance of a murmur or thrill; when the murmur is replaced by a clear sound; when this note is replaced by a dull pulsation; on the disappearance of all sound.

The diastolic pressure is noted on the appearance of the fourth phase, or, if this is not clear, at the fifth. All observations are taken during expiration. When there is considerable respiratory variation in the systolic pressure, the pressure during inspiration is also noted. Between observations, the pressure in the cuff must be entirely released. The pulse pressure is obtained by subtracting the diastolic from the systolic pressure. The systolic, diastolic, and pulse pressure should be systematically entered on a chart. The blood pressure observations with the pulse, respiration, and other data are to be entered on the chart at five or ten minute intervals throughout the operation.

PROGNOSIS AND DIAGNOSIS.

In the present advanced state of surgical knowledge, the patient has a right to expect a fairly exact preoperative diagnosis and a very exact pre-operative prognosis. The prognosis is a matter of importance to the surgeon as well as to the patient. Skill in prognosis results from experience and can be gained in no other way. The surgeon who makes and records a prognosis before each operation and checks up his pre-operative opinion with the result will rapidly gain in skill in this important department.

CLASSIFICATION OF CASES.

The patient who has undergone a proper physical examination before operation will be listed in one of three classes:

The good risks: Patients free from organic disease, whose surgical condition is not likely to prove fatal.

The fair risks: Patients suffering from organic disease but whose surgical condition is not specially serious.

The poor risks: Patients whose surgical condition is so serious or so far advanced as likely to result in fatality.

All patients of the first class are expected to recover. If a fatality should occur among this class of patients, the case should be carefully gone over to determine whether the pre-operative prognosis was in error or if the work of the surgical team is blamable for the fatality.

As an example of cases of the second class; an operation for appendicitis might be urgently required in the case of a patient whom the ex- examination showed to be affected with diabetes. If coma and death follow such an operation, the fatality will be considered to have resulted from conditions beyond human control. If no examination and no prognosis had been made, the necessity for a lame explanation of the result would have arisen.

In the third class are those patients so desperately ill that recovery without operation is unlikely.

CASES STUDIED IN THIS PAPER.

In a series of 1,000 consecutive operations in which this classification was employed, the results were as follows:

	Class 1	Class 2	Class 3	Total
Cases	734	179	87	1000
Deaths	2	14	29	45
Percentage	.27	7.82	33.33	4.5

These deaths occurred from twenty-four hours to three weeks after the operation. No death took place during or immediately following the operation. Measured methods of anesthesia were used exclusively.

MOOTS' RULE.

C. W. Moots has formulated a rule for determining the resistance of patients by pre-operative blood pressure tests. He states the rule as follows: "A case has a systolic pressure of 120 and a diastolic pressure of 80; the pulse pressure is 40 and the ratio of pulse pressure to diastolic is 40 to 80 or one-half, which means 50 per cent. of the diastolic pressure. This pressure ratio is really an important matter, as it represents the relationship existing between the kinetic energy expended by the cardiac contraction in moving the blood column and the potential energy stored in the arterial walls and column of blood which they contain. If the pressure ratio is high or low, there is reason to apprehend danger. If the pressure ratio lies between 25 per cent. and 75 per cent., the case is probably operable; if outside these limits, it is probably inoperable."

To determine the accuracy of this rule, the series of 1,000 cases referred to has been checked up with the rule in mind. Of the op erable cases, according to Moots' rule, 3.23% died and 96.77% recovered. Of the inoperable cases, 23.07% died and 76.93% recovered. Some of the cases classed as inoperable underwent minor operations safely, and some of those classed as operable died after very serious operations and under circumstances which could not have been readily predicted. The result shows the great value of Moots' rule in surgical prognosis.

MCKESSON'S RULE.

E. I. McKesson has formulated a rule for measuring the severity of shock during operation. He holds that "a typical case of shock is characterized by a diastolic pressure of 80 millimeters or less, a pulse pressure of 20 or less, and a pulse rate of 120 or more," and states that "after a half hour of sustained low pressure and rapid pulse has been passed, almost every patient succumbs either shortly or within three days of surgical shock and heart exhaustion."

The series of 1,000 cases referred to has also been checked up to determine the value of this rule. In a considerable number of cases, shock has appeared as determined by McKesson's rule, has been reported to the surgeon, and the operation has been rapidly completed. All of these patients have recovered. Thirteen of the patients

were in the danger zone as determined by this rule for from 25 to 70 minutes. Of these, nine died, giving a mortality rate of 69.23%. These figures indicate the efficiency and great value of McKesson's rule for determining shock during operation.

CONCLUSION.

Every operative case deserves a preliminary examination, diagnosis, and prognosis. The blood pressure examination is distinctly valuable in making the preliminary prognosis and in the diagnosis of surgical shock. The rule of Moots for determining the resistance of the patient and the rule of McKesson for diagnosing surgical shock are trustworthy and valuable aids.

Book Reviews.

Mental Conflicts and Misconduct. By WILLIAM HEALY. Boston: Little, Brown and Co. 1917.

The careful study of cases and the clear presentation of his conclusions from his work makes all that Dr. Healy writes not only of interest, but of importance. This recent publication gives in more or less detail many cases from his material which are most interesting and instructive psychologically. Dr. Healy's careful study of his cases, while not analogous to the "psychoanalysis" of Freud, has in many of the cases shown a sexual element which has tempted Dr. Healy to an explanation somewhat similar to that of Freud for the psychoneuroses. He considers that the introduction of a child to sex practices, as well as to other forms of wrong doing, results in the rejection or repression of the sex practices, which, nevertheless, remain as a repressed complex, constituting an "inner urge" which finds expression in stealing, truancy or other misconduct.

Those persons who reject the somewhat weird and fantastic psychology evolved by Freud and his followers to explain all neuroses, mental diseases, wit, and one knows not what else, will be able to find a much simpler, and, to our minds, a more satisfactory explanation of these cases in some other assumption. It certainly seems much more natural and more in accordance with well grounded laws of psychology to argue that the relation between the sex practices and the other forms of wrong doing is not so hidden and obscure, but much more probable that all these factors represent various forms of badness to the child to which it turns occasionally, even though a "good" child, in rebellion against restraint and authority, and leaving the sex practices, for which he is not yet sufficiently developed, turns to the other forms of badness which he understands better.

Anatomy for Nurses. By WILLIAM GAY CHRISTIAN, M.D. St. Louis: O. V. Mosby Co. 1917.

This book is a text-book of anatomy. The subject is treated in a detailed manner, yet with a clearness which makes it a book particularly valuable to the pupil nurse. It is well illustrated in diagrammatic style. The subjects treated include: osteology, arthology, myology, splanchology, arteries and veins, the nervous system, the organs of the senses, and histology.

Practical Medicine Series. Vol. x. Nervous and Mental Diseases. Series of 1916. Edited by HUGH T. PATRICK, M.D., and PETER BASSOE, M.D., with the collaboration of LEWIS J. POLLOCK, M.D. Chicago: Year Book Publishers. 1917.

We look forward each year to the new volume of this series of reviews of current literature on nervous and mental diseases, as we know of nothing more satisfactory in this field. The editors from long experience are able to judge not only the articles of the year which are most important, but also those which will be of the most interest generally. The abstracts of the papers on the examination of the cerebro-spinal fluid and those on poliomyelitis are perhaps good examples of those that are of more than transitory value. Among the papers bearing on topics connected with injuries and diseases produced by the war, the abstract of Mott's Lettsomian lectures on the Effects of High- Explosives on the Central Nervous System, and of Holmes' Goulstonian lectures on War Injuries of the Spine, are especially noteworthy.

The Elements of Hygiene and Public Health. By CHARLES PORTER, M.D., B.Sc., M.R.C.P. London: Oxford University Press. 1917.

This volume is designed to aid the medical practitioner in his public health work of disease prevention and health preservation. It deals with the various departments of hygiene, particularly the personal, public, factory, and school aspects. The author presents a careful study of the subject matter of hygiene—diseases, the natural requirements of the human being—air, water and food—statistics and statistical methods, law and sanitary science. The medical practitioner is urged to consider, besides the treatment of disease, its causation, prevention, and the importance of observing hygienic principles in surroundings and external conditions; this book is a valuable guide in complying with this request.

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PEACE AND THE NEW YEAR.

The year 1919 bears promise to be the most auspicious in the history of mankind; for it is likely to mark the beginning of an epoch more hopeful in prospect for the welfare of humanity than any which yet has dawned. Though the war is not yet technically ended, we may fairly expect within the year just begun the official establishment of a lasting and secure peace.

During the past quinquennium the war has unrolled before our eyes the panorama of the most poignant and momentous drama which the human race has ever enacted. Like all great events, it is still too near to be judged in accurate perspective. From the biologic standpoint, it may be regarded as an incident in evolution; but from the moral and humane aspect it has been of portent far beyond its academic significance.

Physicians are justly proud and grateful for the part which it has been the privilege of their profession to take in the great conflict. The service and the progress of medicine in the war constitute a page that will ever be illustrious in its history. Yet the doctors, like all other classes of relative non-combatants, will always grant eagerly the highest meed of honor to the men who, at peril and loss of life and its most precious possessions, have with their blood purchased the safety of the world and sealed the sacrament of the new peace.

The pride of America, too, may well be humble in the hour of thanksgiving for final victory. It is true that when she entered the war the cause of the Allies was a lost cause, and that it was her fresh strength which turned the tide of defeat. But all great causes, since history began, have been lost causes. The cause of Sparta at Thermopylae was a lost cause; so was that of our own Revolution during the dark winter of Valley Forge; so was that of France when the Pucelle raised her sword against the victorious English armies. It is far more to those who bore the burden and the heat of bitter days of despair, than to those privileged to share in the glory of the eleventh hour, to whom is due the utmost meed of gratitude and praise.

The fondest hope and belief of the world today is that a just league of free nations shall secure the future peace and happiness of the peoples. That such a league may utilize the physical force, which hitherto had been wastefully employed in destructive war, for constructive labor, is perhaps the fairest hope which science may regard as its opportunity in the ages to come. Many problems will be settled upon the cessation of armed conflict. Many others, economic, social, political, will await the thoughtful settlement of the generations of time. That the recent crisis of mankind has been safely passed is assuring evidence that the future is secure and that the New Year and those which will follow it in a succession of ages shall

"Ring out the thousand wars of old,
Ring in the thousand years of peace."

THE CONTAGIOUS DISEASES AND THE CHILD CONSERVATION MOVEMENT.

THE November issue of *The Commonhealth* contains an article dealing with "The Contagious Diseases and the Child Conservation Movement," by Dr. Edwin H. Place. As nearly 90 per cent. of the deaths due to contagious diseases occur during the first ten years of life, efforts to reduce this portion of the child death rate is certainly worthy of consideration in a child conservation plan.

The ultimate success of any plan of diminishing these diseases depends on the education of both parent and child to a real understanding of the manner and methods of spread of contagion and the principles of personal cleanliness and asepsis. Success, therefore, is not to be easily secured, nor quickly, unless new facts and new measures of fighting these diseases are secured.

The public health measures available for fighting contagious diseases are mainly five: Immunization, isolation, quarantine, disinfection, and sanitation and hygiene. Immunization is the only measure which has been effective in the control of highly contagious diseases, such as small-pox and typhoid.

In many diseases, isolation still remains the basis of preventive work. This method is defective, however, in three respects: (1) It is not secured sufficiently early; (2) it is not complete and thorough; and (3) it is not sufficiently prolonged. The essential of isolation technique is the destruction of the virus at its point of exit.

Quarantine was at one time a measure of importance in the control of contagious disease, but the complexity of modern social contact and the spread and range of locomotion have practically removed it as a weapon. Without doubt it is the only method that is effective in the control of the more highly contagious diseases, such as measles and influenza. The greatness of the problem usually prevents the use of this method except in times of nervous stress or hysteria, and then it is always incomplete, consisting in closing the schools and churches and other places of public gatherings. Contact still goes on, however, and even if less free, the epidemic goes through its complete course in a little longer time.

Disinfection has had marked fluctuation in the public confidence as a preventive measure. Terminal disinfection, *i.e.*, after the recovery of the patient, has a very low standing at present. Its fall from favor may be said to be due to three factors: (1) It was expensive, (2) it did not disinfect, and (3) it was not necessary.

The difficulties of disinfection in securing proper concentration, heat and moisture of the gas and its proper confinement are increased by the trouble in deciding how much of the premises should be treated. To thoroughly disinfect the average home would require knowledge of the laboratory expert. As the difficulties of practical disinfection have grown clearer, the non-essential of much of previous routine has become appreciated.

The influence of sanitation and hygiene on the incidence of contagious disease varies inversely with the contagiousness. For example, in measles, rubella and influenza no appreciable protection is given by the best of hygienic surroundings. In those diseases, in which more intimate contact is required for their dissemination, as diphtheria, scarlet fever, etc., hygiene may play a larger part.

No appreciable immunity may be claimed for those who live under such surroundings except so far as they may be protected from contact with the virus of disease. While hygiene has, then, no especial influence on immunity to infection, it may have some slight influence on the course and complications of the disease.

INFECTIOUS DISEASES OF CHILDREN.

IN a bulletin recently published by the Public Health Sevice, a study of 6,078 cases of infectious diseases among immigrant children is reported. The study related especially to cross infection and hospital management. The anthor states that opinion in regard to the proper management of contagious diseases treated in hospitals has undergone much change within the past decade. The old idea that infection occurs through the air and that a distinct quarantine must be drawn between wards and buildings containing patients with different contagious diseases has been gradually abandoned. This bulletin tries to show how, in the Ellis Island Hospital, the new methods have worked out in practice, and suggests changes which will result in additional improvements.

The main conclusion reached as a result of the study is the practicability of treating contagious and non-contagious diseases in the same hospital and with the same nursing force. While it is not advisable to use the same open wards for both classes of cases, it has been demonstrated, nevertheless, that if these wards are cut up into small cubicles and the proper nursing technique enforced there is practically no danger of cross infection.

FRAMINGHAM COMMUNITY HEALTH DEMONSTRATION.

THE fourth of a series of publications issued by the Community Health and Tuberculosis Demonstration of Framingham, Massachusetts, telling the story of a $100,000 experiment, has recently been called to our attention. This is the report of the results of the second medical series of examination campaigns. These two medical series were carried on at different seasons of the year, one in April, and the other in November and December of 1917. As a practical means of discovering cases of tuberculosis, these campaigns have been found to be of great benefit. In the first examination campaign 71 cases of tuberculosis were discovered and placed under treatment. Community health stations were established and citizens were examined by health station physicians. Families were examined at their homes, without charge, and sick persons referred to their local physicians for treatment. As a patriotic measure the members of the community were urged to present themselves for examination, and publicity notices in the newspapers, churches, stores, schools, and factories were distributed. The entire community was covered according to districts and an analysis of the work actually done proves the efficacy of this procedure from the point of view of the discovery of tuberculosis as well as other complicating diseases of a serious or lesser character. As an interesting example to other American communities this work, under the National Tuberculosis Association, is expected to bring under observation a larger number of tuberculosis cases and to prove its leadership in helping to conserve the health of the nation.

MASSACHUSETTS MEDICAL SOCIETY: ANNOUNCEMENT.

THE attention of the members of the Massachusetts Medical Society is called to the slip which was enclosed in last week's copy of the JOURNAL. It is hoped that the Fellows of the Society will take advantage of this reminder and pay their dues promptly, without waiting to receive a personal bill. This will greatly aid the work of the district treasurers. A. K. STONE, *Treasurer.*

MEDICAL NOTES.

BOOKS NEEDED FOR MEN IN HOSPITALS.—"There are tens of thousands of wounded men in our army hospitals and every returning transport and hospital ship brings more thousands. Many of these men will be in hospitals for months, some of them for a year or more, before they are sufficiently recovered to be discharged from the army.

"These men need books. They need books more than they need almost anything else, except surgical care and nursing."

Herbert Putnam, librarian of Congress, who is general director of the Library War Service of the American Library Association, thus directs attention to an opportunity for service that is open to everyone. For the books that are needed for our men in hospitals and those in camps awaiting demobilization are the books that are on the book shelves of almost every American home.

"What these men need in reading matter is good current fiction," said Dr. Putnam "The American Library Association has supplied and is supplying technical and educational books by thousands to meet the insistent demands of our men in uniform for that class of reading matter. These books have to be bought, and almost all of the funds available for the Association's Library War Service are required for this purpose and for the maintenance of the service.

"For fiction and general literature we have to depend largely on gifts from the public. Since last spring more than three million gift books have been placed in the hands of our soldiers and sailors. Books wear out, and these books have been widely scattered among the camps on this side and overseas, so now we have no reserve supply of good fiction to draw on

for the pressing need of the moment, which is in the hospitals and the demobilization camps.

"Every good recent book that can be spared from anyone's personal book shelf will find its way quickly into the hands of some soldier or sailor who needs mental relaxation and recreation, if it is taken or sent at once to the nearest public library. Every public library in the United States is a receiving station for Library War Service and books received are forwarded as speedily as possibly to the hospitals and demobilization camps.

"There is no better way to make a New Year's gift to the men who have been wounded in our service than to give books."

PUBLIC HEALTH MEETING IN CHICAGO.—At an annual meeting in Chicago on December 11, it was announced that the health authorities of the country, through the American Public Health Association, will strengthen defenses against influenza epidemics by coöperating with the Rockefeller Foundation and other public and private sources.

Papers were read on the treatment and handling of venereal diseases in the Army and on the Government's social hygiene campaign around army camps. Dr. Royal S. Copeland, New York City's health commissioner, expressed the belief that efforts are being made by the pulpit, press, and home to obstruct educational campaigns, which he considers necessary to combat the spread of such diseases.

REPORT OF SURGEON-GENERAL OF THE ARMY.—The annual report of the Surgeon-General, U. S. Army, for 1918 (including statistics for the calendar year 1917 and activities for the fiscal year ending June 30, 1918), has just been issued from the Government printing office. It contains a comparative study of the health of the Army, 1820-1917; an account of the health of the mobilization camps and of the Army by countries; a consideration (70 pages in extent) of the principal epidemics in the camps; and a discussion of fractures and operations. Nearly 200 pages are devoted to the special activities of the medical department:—with the American Expeditionary Forces, and in the divisions of sanitation, hospitals, supplies, laboratories and infectious diseases, internal medicine, general surgery, orthopedics, head surgery, neurology and psychiatry, psychology, food and dental and veterinary corps. In addition to the usual tables of illness, discharge for disability and death, there are given tables of battle wounds and operations; of complications of various diseases and of case mortality. The text is illustrated by 73 charts. Altogether the report is a study of health and morbidity in an Army of over 1,500,000 men, for the most part yet in the period of training. It should be of interest to epidemiologists, vital statisticians and army medical men.

CONSOLIDATION OF MEDICAL JOURNALS.—A few weeks ago we received an announcement from the *Medical Review of Reviews* advising us that they had just purchased the *Buffalo Medical Journal,* which was to be consolidated with their own publication in January.

We are just in receipt of another announcement from the *Medical Review of Reviews,* advising that they have also purchased *The Southern Practitioner,* which will also be consolidated with the *Review* next month.

INFLUENZA IN DUTCH EAST INDIES.—It has been unofficially reported that there are a million cases of influenza in the Dutch East Indies.

INFLUENZA EPIDEMIC IN GUATEMALA.—On December 12, an outbreak of influenza, with extremely high fatality rate, was reported from Guatemala. The epidemic is especially prevalent in the northern and western mountainous regions of the country.

SURGEON-GENERAL BLUE ISSUES WARNING.—Surgeon-General Blue has issued a warning to the country that the influenza epidemic is by no means ended, and that all possible precautions against the disease should be taken. Reports received by the Public Health Service show a recrudescence of the disease practically from one end of the country to the other. Dr. Blue advised the closing of the public schools on the first sign of the reappearance of the epidemic. He emphasized the importance of every individual taking precaution.

Information reaching the Public Health Service shows that in California increases in the number of cases are reported from San Francisco and many other cities. Indiana reports no improvement in the situation, except that the cases are milder, while in Iowa there has been a marked increase in the number of cases.

RELEASE OF PHYSICIANS IN ARMY IS ASKED.—In Toledo, Ohio, 168 new cases of influenza were reported on December 12. The City Health Department has addressed a communication to the Secretary of War, asking him for the immediate release of physicians now in the Army, in order that they may return and aid in the fight against the outbreak of the epidemic. Twenty local physicians are reported to be in the service at Camp Greenleaf, Oglethorpe, Georgia. The schools have been closed to children under 18 years of age.

MEDICAL CONTROL ON THE ISLAND OF CYPRUS.—In the public health report issued for November 29, is published the following report of the malarial control on the Island of Cyprus:

"The annual medical report of the island of Cyprus for 1917 summarizes the antimalaria campaign which has been conducted on that island since 1913 and the results obtained. The number of cases of malaria treated was reduced from 10,035 in 1912 to 2,709 in 1917 and the percentage of enlarged spleens in school children was reduced from 17.2 per cent. in 1913 to 6 in 1917. The antimalaria work, as summarized in this report, has consisted of cleaning and improving drains and streams; making new drains; filling in, screening, or covering wells; stocking wells with fish; filling in or draining pools; cutting and removing of grass. Drugs were used to some extent.

"Shortly after the occupation of the island by the British in 1878, all troops except a small garrison were withdrawn because of the prevalence of malaria. During the present war, however, the island has been used for troops and a camp for prisoners of war has been established. The medical officer in charge reports no primary cases among prisoners and a rate among the troops of only 0.4 per cent."

BOSTON AND MASSACHUSETTS.

WEEK'S DEATH RATE IN BOSTON.—During the week ending December 14, 1918, the number of deaths reported was 295 against 229 last year, with a rate of 19.61 against 15.46 last year. There were 34 deaths under one year of age against 33 last year.

The number of cases of principal reportable diseases were: Diphtheria, 28; scarlet fever, 18; measles, 4; whooping cough, 13; typhoid fever, 2; tuberculosis, 45.

Included in the above, were the following cases of non-residents: Diphtheria, 1; tuberculosis, 4.

Total deaths from these diseases were: Diphtheria, 6; tuberculosis, 21.

MENTAL HYGIENE SOCIETY MEETING.—At the annual meeting of the Massachusetts Society for Mental Hygiene, held at the Twentieth Century Club, Boston, on December 10, the discussion centered about the bearing of mental hygiene on the education of the child, the adolescent, and the soldier. Professor William H. Burnham of Clark University, president of the society, announced that the two days' sessions of the annual conference of the society, to be held at Lorimer Hall, January 16, will be devoted to different aspects of this subject—the afternoon to lessons for mental hygiene from the war, and the evening to the immediate possibilities of the application of mental hygiene in the schools.

Professor Burnham in his address emphasized the opportunity for education following the great war, and the possibilities of training in morale in the public schools.

Dr. Charles W. Eliot, Dr. Herbert B. Howard, and others took part in the discussion.

$2,500 BEQUEATHED TO BOSTON DISPENSARY.—By the will of the late Dr. Samuel Abbott Green, $2,500 has been bequeathed to the Boston Dispensary.

PRECAUTIONS STILL NECESSARY AGAINST INFLUENZA.—Dr. John S. Hitchcock, director of the division of communicable diseases of the State Health Department, believes that the present flurry of influenza throughout the State, while milder in character and attended with fewer fatalities from pneumonia, so far as can be diagnosed, is the same that swept the State in the proportions of an epidemic a short time ago. He is of the opinion that many of the cases reported as influenza are, after all, nothing more alarming than head colds. However, the people must again be cautioned against carelessness. The general rules laid down so often during the height of the epidemic should be observed.

Dr. M. Victor Safford of the Boston Health Department attributes the present recurrence of influenza to thoughtless crowding and want of care in visiting homes in which inmates have

been sick. In almost every case of influenza reported recently investigation traced its origin to the home of some person sick with, or who previously had the disease.

After the peace parade in Boston there was a sudden increase in the number of cases reported, which of itself should be an argument against unnecessary mingling in big crowds. Again, after Thanksgiving, there followed another sudden increase in new cases reported, evidently the result of indiscriminate home parties and gatherings. Precautions should be taken on Christmas.

State health officials believe that although the daily average of new influenza cases reported has jumped from 600 a week to between 800 and 900, it represents the end of the epidemic.

Figures reported to the Health Department on December 11 on the recurrent influenza-pneumonia contagion show a decrease in the total of new influenza cases, 76 having been reported for the twenty-four hours before nine o'clock on December 11, against eighty-four for the corresponding period on December 10. A remarkably low death rate continues and this is the hopeful element in the present situation. There were only four new deaths from influenza and two of lobar pneumonia reported on December 11.

In Waltham the outbreak of influenza is becoming more serious. Twenty-six cases were reported to the Board of Health on December 10. There are now more than 75 cases in the city.

In Brockton, the Belmont Hospital has been taken over by the Board of Health for the treatment of influenza patients. It has thirty-five beds and four nurses. On December 12, sixty-three new cases of influenza and two deaths resulting from pneumonia were reported in this city.

On December 12, in Boston and vicinity, the report to the Health Department showed an increase in the number of cases. There were 79 new influenza cases and eight deaths from this cause, and 15 new cases of lobar pneumonia, with nine deaths.

The report to the State Department of Health on December 11 includes 1,859 cases of influenza, more than three times the daily average of the preceding week. It is believed that this figure covers cases that developed in some cities and towns in a period of more than 24 hours, and that the actual number of cases developed within that time was probably about 1,200. Twenty-four deaths were reported.

A report from Wellesley College showed that 149 students have been ill with influenza since October 4.

On December 13, 75 new cases of influenza were reported to the Health Department. Although this figure is still high, there has been a decided decrease in the number of deaths due to influenza and lobar pneumonia; only three deaths from influenza and four from lobar pneumonia were reported. There were 13 new cases of pneumonia.

Throughout Plymouth County residents are becoming alarmed at the rapid increase in influenza cases in the various cities and towns, and the authorities have put into force the precautions used during the epidemic two months ago.

In Whitman, there are now 500 cases. Fifty-four were reported on December 11. The schools have been closed, and a representative of the State Board of Health has conferred with local authorities in regard to the establishment of a pneumonia hospital.

The Board of Health of East Bridgewater has closed the schools and has put a ban on all public gatherings. More than 200 cases have been reported from Abington. In Rockland it is believed that the pneumonia hospital used in the recent epidemic will be reopened.

Owing to the increased number of influenza cases in Foxboro, the Board of Health has ordered all public schools and moving picture houses closed. Conditions are less serious than in the late epidemic.

SOMERVILLE MEDICAL SOCIETY.—At a meeting of the Somerville Medical Society, held December 12, the following resolution was unanimously passed:

"Resolved, that the Somerville Medical Society recommends that a change should be made in the Department of Health of the City of Somerville, that the present Board should be abolished and instead there should be appointed by the Mayor a Commissioner of Health, who is a graduate in medicine, who will serve full time and have full charge of all health departments of the city, and whose salary shall be determined by the Board of Aldermen."

A. N. MAKECHNIE, *Secretary*

STATE INVESTIGATION OF COMMUNICABLE DIS-

EASES.—Dr. John S. Hitchcock, head of the Bureau of Communicable Diseases of the State Department of Health, has reported the progress made in the campaign which has been undertaken by the department to check the spread of venereal diseases.

Clinics have been established in Attleboro, Boston, Brockton, Fall River, Lowell, Lynn, Pittsfield, Salem and Worcester. Work has been started to open clinics in Lawrence, New Bedford, Newburyport, Springfield, Fitchburg, Haverhill and Holyoke.

Boston clinics are at the Boston City Hospital, Boston Dispensary, Massachusetts General Hospital and the Massachusetts Homeopathic Hospital.

The reports of the cases sent the department are by numbers only. The only person who knows the name of the patient is the physician in charge. Dr. Hitchcock said it would be a number of years before statistics could be furnished showing definitely the manner in which the State campaign reduced cases of venereal disease, but he said good had been accomplished already in getting hold of thousands of people and placing them under regular treatment.

Since February 1, when venereal diseases were made reportable by the department, 9,807 cases have been reported, and all except 193 have been kept under treatment until discharged by physicians working with the State. One hundred and ninety-three ran away from treatment and could not be located.

Part of the campaign is educational, and 98 lectures have been given to 75,000 persons; the film "Fit to Fight," has been shown to 65,000 men.

Miscellany.

AMERICAN PUBLIC HEALTH ASSOCIATION. SECTION ON VITAL STATISTICS. COMMITTEE ON STATISTICAL STUDY OF THE INFLUENZA EPIDEMIC.

THE above committee was appointed November 20, 1918, by the chairman of the section on vital statistics to consider practical ways and means of collecting and analyzing the mortality and morbidity data of the epidemic of influenza, and to draw up recommendations on these matters.

The chairman of the committee on statistical study of the influenza epidemic, sent out a call to city and state registrars of vital statistics, and to statisticians skilled in the analysis and interpretation of statistical data, for a meeting in Philadelphia, Pa., on November 29 and November 30, 1918.

A list of persons contributing to the committee discussions follows: Dr. Wilmer Krusen, Dr. Charles Scott Miller, Dr. Louis Lehrfeld of the Philadelphia Department of Health; Dr. John T. Black, commissioner of health of the State of Connecticut; Dr. Frank W. Wright, Dr. Walter H. Brown, health officers of New Haven and Bridgport, Conn., respectively; Prof. C. E. A. Winslow, Department of Public Health, Yale School of Medicine; Dr. Frederick S. Crum and Mr. Arne Fisher, Prudential Insurance Company of America; Dr. Seneca Egbert and Dr. W. H. Smyth, School of Medicine, University of Pennsylvania; Dr. J. P. Lichtenberger, Wharton School of Finance, University of Pennsylvania; Mr. Edwin W. Kopf and Mr. George H. Van Buren, Metropolitan Life Insurance Co.; Prof. Charles C. Grove, Columbia University; Prof. Horace C. Richards, Department of Mathematical Physics, University of Pennsylvania. Offers of coöperation in the work of the committee were received also from Mr. Robert B. Henderson, actuary, Equitable Life Assurance Society; Dr. Royal S. Copeland and Dr. W. H Guilfoy of the New York City Department of Health; Dr. Charles V. Chapin, Providence Department of Health; Dr. Richard M. Pearce, Department of Research Medicine, University of Pennsylvania; Dr. W. H. Davis, Division of Vital Statistics, Bureau of the Census; and Prof. R. E. Chaddock, Columbia University.

The committee met in general session on Friday morning, November 29, and took up successively the following main points in the statistical study of the epidemic:

1. Estimates of the population exposed to risk, with due allowance made for the absence of persons in the military service and for the presence of munition and other war workers.
2. Uniform tables for the reporting of deaths according to day and week of occurrence, color or race, sex, age, etc.
3. Practical study of infant mortality incident to the epidemic.
4. Establishment of *norms* of mortality from (a) all causes of death, (b) influenza and (c) pneumonia during the months of September and October. Also the computation of *norms* of infant mortality considered as (a) "birth mortality" and (b) "true infant mortality."
5. Effects of various administrative and other control measures upon the course of the epidemic.
6. Fatality and other characteristics of the disease under hospital care. Standards of institutional statistics of the epidemic, effect of vaccines in the prevention and treatment of the disease.
7. Mortality among women in the gravid and parturient states.
8. Mathematical and other higher analytic study to determine the law of the epidemic, and

possibly the typical characteristics of the disease through such mathematical or higher analytic study.

9. Application of pathometric theory to influenza data.

Following the general discussion on Friday morning, two subcommittees were designated to consider the following general aspects of the statistical situation.

I. Subcommittee on registration and tabulation practice: Dr. Charles Scott Miller, chairman; Dr. C. E. A. Winslow, recorder.

II. Subcommittee on pathometry of the epidemic: Dr. Charles C. Grove, chairman; Mr. Arne Fisher, recorder.

As a result of the deliberations of these subcommittees, the following resolutions were offered. These resolutions received the endorsement of the entire committee.

I. REGISTRATION AND TABULATION PRACTICE FOR STATES AND FOR CITIES 25,000 OR MORE IN 1918.

1. Resolved: That the Bureau of the Census be asked to prepare revised estimates of the 1918 mid-year population of the states and of cities having a population of 25,000 or over, if possible, with distinction by color or race. Due consideration to be made for special variations of population due to the absence of persons in military service, the presence of persons engaged in munitions and other war industries. Allowance to be made also for other factors such as extraordinary migration of populations due to other causes.

2. Resolved: That whenever death rates are based on local population estimates there shall be presented, also, a parallel column of data based upon such estimates of mid-year population as may be finally decided upon by the Bureau of the Census.

3. Resolved: That all population estimates be accompanied by a statement of method used in compiling such estimates for the particular locality.

4. Resolved: That deaths occurring in communities among men in military service should be deducted from deaths of the civilian population and separately tabulated in form parallel to that provided for influenza statistics of the civilian population.

5. Resolved: That all tabulations of the statistics of the influenza epidemic, there be presented mortality statistics showing the following facts: (a) Deaths from all causes, (b) deaths from influenza, (c) deaths from all forms of pneumonia, (d) deaths from all respiratory diseases combined, and that such data be compared with a *norm* for corresponding weeks or days, such *norm* to be based upon the average of five preceding years, if possible. If *norm* is computed in any other way, the method is to be detailed in the report.

6. Resolved: That, wherever possible, tabulations should be presented showing all deaths in which influenza or pneumonia (all forms) is given as a *contributory cause*. Such special tabulation to show in relation to the influenza or pneumonia, the other causes of death involved. Comparative tables to be prepared from these data, similar to those in which influenza or pneumonia, all forms, is considered as a primary cause of death. When "influenza" or "pneumonia" (all forms) are reported jointly or in combination with other causes of death, the Bureau of Census *Index to Joint Causes of Death* shall be followed in deciding which course is "primary" and which "secondary" for purposes of these tabulations.

7. Resolved: That tabulations of deaths from all causes combined, be prepared for each week from September 1 to December 31, 1918; first by color or race; then by sex, each sex class to be further subdivided by age periods as follows: By single years of age up to five years and by five-year age periods thereafter up to age 65. ages 65 and over to be shown in one group. Weeks of death ending with midnight of each Saturday are stipulated herein.

8. Resolved: That similar tables to those outlined in resolution 7, be prepared for deaths ascribed as having been due to "influenza" or "pneumonia, all forms."

9. Resolved: That for all cities having a population of 25,000 or more in 1918, and for states, tables be prepared showing the *total number of deaths from all causes of deaths combined, by single days of death* (*actual* day of death) during the epidemic period, in addition to the requirements of No. 7 and No. 8; also that deaths from "influenza" and "pneumonia, all forms," be similarly tabulated. The epidemic period for the several cities and states shall include two weeks before the first day and two weeks after the last day upon which influenza shall have been adjudged to be epidemic by the State Commissioner of Health, or in the absence of such declaration, by the local health officer.

10. Resolved: That data for the deaths between September 1 and December 31, 1918, of infants under one year of age be provided as follows: (a) Deaths by week of age, under three months; (b) deaths by months of age, up to one year; each of these classes to be tabulated by *calendar weeks of death*, defined as in No. 7 above, and each of such groups on infant mortality to be further subdivided into the following groups of causes: (a) Total "influenza" and "pneumonia, all forms," (10, 91, 92); (b) total deaths showing "influenza" and "pneumonia, all forms," when classified as secondary or contributing causes of death; (c) total diseases of the respiratory system (86 to 98); (d) total diseases of gastrointestinal tract (99 to 118); (e) total all other causes of death. (Numbers after causes of death are International List titles.)

11. Resolved: That for comparison of infant mortality during the epidemic, a *norm*, or series

of graduated indexes of infant mortality, by week, during the last four months of the year, and by sections of the country, shall be adopted similar to that used by the Prudential Insurance Company of America and prepared by them from the weekly reports of the Bureau of the Census. This *norm* to be prepared under the direction of the subcommittee on pathometry in a central office to be designated later.

12. Resolved: That data should be gathered by special investigation wherever possible, with regard to the incidence and fatality of epidemic influenza among pregnant women. It is suggested that the records of obstetrical dispensaries, visiting nursing associations and of maternity centers be examined to establish this fact, and that the statistical study of such records be based on not less than 10,000 records of unselected character. The complications and status of the product of pregnancy in each case of sickness and death of pregnant women during the epidemic to be specified.

13. Resolved: That *reported cases of influenza* be classified by sex and age for each calendar week of the epidemic, wherever possible.

14. Resolved: That it is most important to determine by special investigation the average and classified duration of disease from onset to recovery, or death, and also the average, maximum and minimum periods of incubation in the several states and cities.

15. Resolved: That a questionnaire be sent out to all states, and to cities of 25,000 and over in 1918, requesting the following information: (a) Date of the ordinance requiring reporting of influenza and pneumonia cases; (b) date of closing and reopening of schools; (c) date of closing and reopening of theatres; (d) date of closing and reopening of other places of public assemblage; (e) date of opening and closing of emergency hospitals other than emergency wards of regular hospitals. Number of such emergency hospitals and bed capacity of each, with statement of total cases handled and number of such cases terminated by death; (f) date of closing and reopening of saloons; (g) date of closing and reopening of churches; (h) regulation of soda fountains. Specify measures employed; (i) regulation of transportation systems—by stagger system, or otherwise. Please specify; (j) date of occurrence of first-known case; (k) on the use of vaccine in the community. Indicate possible sources (industrial establishments, camps, etc.) of data on use and results of vaccine treatment; (l) special educational campaigns; (m) regulation of funerals; the burial problem; (n) regulations governing the handling of foods. Copy of questionnaire to be sent you later.

16. Resolved: That data should be obtained in regard to the number of physicians and nurses in each community serving during the epidemic and the number of such physicians and of such nurses who died from influenza, pneumonia and other causes directly attributable to service during the epidemic.

17. Resolved: That each community should specify whether the use of masks was compulsory or not, and for what groups of individuals in the community.

18. Resolved: That the Surgeons-General of the Army and of the Navy be asked to furnish the Committee on Statistical Study of the Influenza Epidemic with data for military and naval populations of each encampment. The data thus furnished to be classified as outlined for the civil population in the foregoing resolutions Further, be it resolved that data be supplied from these military and naval records on the duration of incapacity for military duty, such durations to be shown by "classified" days of disability. If possible, data should also be given with respect to the *sequelae* of influenza and pneumonia cases handled during the epidemic in the several camp hospitals.

19. Resolved: That the Surgeon-General of the United States Public Health Service be requested to prepare a digest of the sanitary regulations promulgated by his office prior to the epidemic, and those adopted during the course of the epidemic, in cities 25,000 population and more, for the prevention and control of influenza.

II. PATHOMETRIC STUDY OF THE EPIDEMIC.

Pathometry is herein defined as the mathematical study of epidemiological data. The subcommittee on pathometry of the influenza epidemic, working independently of the committee on registration and tabulation practice brought in a report as follows:

1. Minimum of data required for purposes of pathometric study of the epidemic.

(a) Deaths by ages—All causes of death: By weeks of life up to three months; by months of life up to one year; by single years of life up to five years; by five-year age periods thereafter up to age 65; all ages 65 and over to be combined; (b) the above divisions of the data to be classified as to sex. (We asked for further classing of these data by nationality, but later withdrew our request); (c) items under (a) and (b), immediately above, to be tabulated by calendar weeks of occurrence. Actual dates of death to be given, and weeks to end with midnight of each Saturday; (d) statistics of the causes of death are to be shown as follows: Ages under one year—Total "influenza" and "pneumonia, all forms"; total deaths showing "influenza" or "pneumonia, all forms," as secondary or contributing causes of death; total diseases of the respiratory system; total diseases of the gastrointestinal tract; total all other causes of death. Ages one year and over—Total "influenza" and "pneumonia, all forms"; total deaths showing "influenza" or "pneumonia, all forms," when classed as secondary or contributing causes of death; total all other causes of

death; (e) data specified (d) to be presented for the same sex and age classes as in (a) and (b) above.

The only apparent point of disagreement between the recommendations of the two subcommittees was in the specification of the classification by nationality and color, and by sex with age distinction for each of these classes. In the recommendations of the committee on tabulations and registration practice, only sex grouping was to be shown for age periods; in order to save tabulation work. The ruling of the general committee was that the registration and tabulation subcommittee's request should be final in this matter. Color or race distinction shall be shown only by calendar week or occurrence of death, except, perhaps, for cities where there is a sufficient colored population to make a special study desirable.

2. Norms of mortality during the months of September to December.

(a) Norms for infant mortality: The central analytical office will use the graduated weekly index of infant mortality prepared by the Prudential Insurance Company of America for the section of the country in which a particular state or city is situated. Local conditions and tabulation difficulties may require slight modifications in the index. For Southern states and cities, use the Central Atlantic Cities table.

(b) Norms of child and adult mortality: Mortality norms of "influenza," "pneumonia," and all causes of death combined are now under consideration by the subcommittee on pathometry, and a recommendation will be offered after the data recommended by the subcommittee on registration and tabulation practice have been collected.

3. Pathometric study of the data collected.

(a) Separation of mortality from September to December, 1918, above the norms for: (1) Infant mortality (classed as "birth mortality" and "true infant mortality"); (2) child and adult mortality.

(b) Analytic study of the data: (1) Fitting of curves to the observed data in "excess" of "normal" mortality. Computation of parameters of the equations and the constants of the distribution, mean, mode, dispersion skewness, excess); (2) studying these curves with a view to: Locate the beginning, peak and ending of the epidemic in the several states and cities; ascertain the period of incubation, from the characteristics of the curves in the several states and cities, and especially from the Army and Navy statistics requested by the subcommittee on registration and tabulation practice in resolution 18 of the foregoing text; (3) correlation studies between infant mortality (especially "true infant mortality") and adult female mortality, ages 15 to 45 years, during the epidemic; (4) correlation, for adult population, between "influenza" and "pneumonia, all forms" rates and the rates of complicating and contributory causes.

It should be noted that the above suggestions and recommendations were outlined independently of the main committee. There were a few slight differences which were not relevant. The aim of the pathometric study of the data of the epidemic is to bring the available facts into relation with other epidemiological studies, especially those under way in Great Britain. The committee anticipates that conclusions of lasting value to the American public health movement will result from competent higher analysis of the data requested in this memorandum.

This report will be sent to all registrars of cities of 25,000 population and over and to all states. It is understood that, as herein given, the recommendations are subject to final approval by the assembled Section on Vital Statistics at its meeting in Chicago, December 9 to 12, 1918. No very marked changes are anticipated, however, and registrars may proceed with entire safety in the preparation of tabulation from the mortality records. The Committee on Statistical Study of the Influenza Epidemic will shortly send out standard blanks for the reporting of the tabulated facts as soon as the epidemic has subsided to a sufficient degree in the several states and cities to warrant the collection of a complete record. As soon as arrangements have been completed, a central compiling office will be designated. All offices contributing in any way to the combined experience will receive a copy of the finished results, including the mathematical analysis and interpretation of the statistics.

The foregoing resolutions and text were agreed upon by the following members of the committee who remained to vote:

I. Subcommittee on tabulation and registration practice: Charles Scott Miller, chairman; Seneca Egbert, H. F. Smyth, Louis Lehrfeld, Frederick S. Crum, Frank W. Wright, John T. Black, Walter H. Brown, Alonzo Stewart, George H. VanBuren, C. E. A. Winslow, recorder.

II. Subcommittee on pathometry of epidemic: Charles C. Grove, chairman; Arne Fisher, recorder; Horace C. Richards, Department of Mathematical Physics, University of Pennsylvania; and Robert Henderson, Actuarial Society of America, coöperating.

EDWIN W. KOPF, *General Chairman.*

All communications on above matters, please address to the General Chairman, One Madison Avenue, New York City.

RESOLUTION ON THE DEATH OF DR. PUTNAM.

At a meeting of the Massachusetts Society for Mental Hygiene, held December 10, the following resolution was adopted:

"Resolved, that to this Society and the cause

it represents and particularly to the Executive Committee of which he was a most valuable member, Dr. Putnam's death is a severe loss. His keen interest and hearty coöperation in the work of the Society, his wise and impartial judgment, wide influence, and rare and winning personality will be sorely missed. Because of the example he set of abiding enthusiasm, indefatigable industry and thoroughness in every line of his chosen work, and because of the respect and admiration which his qualities and attainments brought him, it was a source of great satisfaction and pride that he should be one of our number."

It was voted that a copy of this resolution should be sent to his family and the BOSTON MEDICAL AND SURGICAL JOURNAL, and entered in the records of the Society.

CHARLES E. THOMPSON, *Secretary.*

EARLY SATIRE ON THE MEDICAL PROFESSION.

IN an issue of the *Lancet* for March 9, 1918, appears the following comment on two early satires on the medical profession, published in the 18th century:

"The 'Chinese Spy' of 1766 was perhaps justified in referring to 'physic, that dreadful science which has got the life of man within its gripe,' and to 'companies in Europe, who have a license to kill; their sentences of death a physician's prescription.' But this sounds strangely like some of our contemporary libels, though the assertion that 'at present anyone who pleases may practise physic' is unfortunately quite near modern fact. The Spy, ending his thesis in his brief letter to Pekin, decides that 'it were proper to suppress physic, that everybody, having no other recourse, might become his own physician.'

Whitaker Newman's very interesting 'Essay on the Principles and Manners of the Medical Profession' dates from 1783, and would seem to have become a stereotyped tradition with many later magazine writers. Newman writes feelingly of the 'dishonourable avidity for business, which stoops to any meanness to obtain it, and defective through ignorance or indolence, of real merit, disdains not to call in the unmanly aid of adulation, detraction, and foul-mouthed abuse.' But, adds the writer, the candidate for practice should remember that a rival may villify him as easily as he abuses another behind his back. Mr. Newman refuses to enter into a detail of 'the frequent and frivolous animosities' which are the scandal of the profession. There are too many medical men, he opines, and this bad state of things will continue so long as apprentice fees are sought after by leaders of the profession. The apprenticeship system, according to Newman, tended to perpetuate ignorance or semi-education and to raise up an unprincipled generation of men, bred in drudgery and devoid of honour.

Satire on the apprenticeship system would be absurd in 1918, for the system has vanished, but our own contemporary satire seems often to be aimed at the class of young practitioners decried by Newman. The modern satirist of the school which Mr. Bernard Shaw represents differs entirely in one point from Newman. The modern hates the academic and hopes some day to see Harley street blazing with the 'brass plates' of the unqualified, which shall severally contain the legend—'No connection with the Medical Council.' Newman in his eighteenth century manner thinks that what the profession most lacks is academic training. 'The metropolis of England,' he writes in the age of the Hunters, 'is without a college or professorship adequate to the purpose of improving by theory and physiology its superior practical advantages.' To the absence of academic training Newman would have attributed the existence of the Bob Sawyers and Ben Allens who survived in the days of Dickens, though Dickens decorated the type out of all recognition.

Bad faith, malpraxis, heroic experimentation bred of ignorance, inexperience, the humbug of etiquette, and a deceptive and ingratiating bedside manner—all these are charged against medical men by the ancient satirists. We even find in the old satires the gibing anecdote of the doctor who has himself called ostentatiously out of church early in the service. He is called out to give an impression of busy practice and also because, being an infidel by nature, he hates church! The medical man's smart equipage is still known to moderns, but is the descendant of an ostentation now impossible. Newman alludes to unheard-of display, but holds that 'the vivifying and cordial effects of an elegant chariot, and the specific qualities of a footman in livery, agreeably gild the pill, and happily disguise or relieve the awkward circumstances of illness.' The vulgar modern idea that the medical man experiments on his poorer patients is also antique, and was, perhaps, true when it was first conceived. It is certainly not true today, nor is the bulk of the old satire, however much its calumnious substance may be preserved in the writings of satirists ignorant of the trend of professional history during the last hundred years."